Please amend the claims as follows.

1. (Currently amended) A method of generating an optically sectioned image of a specimen comprising the steps of:

illuminating the specimen with a temporally modulating~~, spatially periodic~~ illumination pattern;

imaging said specimen on a conjugate image plane;

acquiring a plurality of signals at respective positions on said image plane, each signal corresponding to the incident light intensity at that position and having an oscillatory component caused by the modulation of the illumination pattern; ~~and~~

measuring a characteristic of the oscillatory component of each of the signals~~, whereby the measured characteristics when combined in their relative positions generate an optically sectioned image of the specimen~~; and

generating an optically sectioned image of the specimen by combining the measured characteristics in their relative positions.

2. (Original) A method of generating an image according to claim 1, wherein the measured characteristic is the amplitude of the oscillatory component.

3. (Previously presented) A method of generating an image according to claim 1, further comprising the step, between the acquisition and measuring steps, of filtering each acquired signal to isolate the oscillatory component therefrom.

4. (Previously presented) A method of generating an image according to claim 1, wherein the illumination pattern is a fringe pattern.

5. (Original) A method of generating an image according to claim 4, wherein the fringe pattern is an interference pattern.

6. (Previously presented) A method of generating an image according to claim 1, wherein the illumination pattern is modulated by moving the illumination pattern relative to the specimen object plane.

7. (Previously presented) A method of generating an image according to claim 1, wherein the illumination pattern is modulated to produce an illumination modulation frequency of at least 100 Hz

8. (Previously presented) A method of generating an image according to claim 1, wherein the incident light at the image plane comprises reflected or transmitted light.

9. (Previously presented) A method of generating an image according to claim 1, wherein the incident light at the image plane comprises light which is emitted by the specimen in response to the illumination pattern.

10. (Currently amended) A method of processing optical signals to generate an optically sectioned image comprising:

receiving data which comprises a plurality of signals previously acquired by performing the steps of (i) illuminating a specimen with a temporally modulating~~, spatially periodic~~ illumination pattern, (ii) imaging said specimen on a conjugate image plane, and (iii) acquiring a plurality of signals at respective positions on said image plane, each signal corresponding to the incident light intensity at that position and having an oscillatory component caused by the modulation of the illumination pattern, and

measuring a characteristic of the oscillatory component of each of the signals, whereby the measured characteristics when combined in their relative positions generate an optically sectioned image of the specimen.

11. (Currently amended) ~~A microscopy~~ An imaging apparatus comprising:

illumination means for illuminating a specimen with a temporally modulating~~, spatially periodic~~ illumination pattern;

imaging means for imaging said specimen on a conjugate image plane;

acquisition means for acquiring a plurality of signals at respective positions on said image plane, each signal corresponding to the incident light intensity at that position and having an oscillatory component caused by the modulating illumination pattern; and

processor means for measuring a characteristic of the oscillatory component of each of the signals, whereby the measured characteristics when combined in their relative positions generate an optically sectioned image of the specimen.

12. (Currently amended) ~~A microscopy~~ An imaging apparatus according to claim 11, wherein the processor means also filters each acquired signal to isolate the oscillatory component therefrom before measuring the characteristic of the oscillatory component.

13. (Currently amended) ~~A microscopy~~ An imaging apparatus according to claim 12, wherein the illumination means modulates the illumination pattern to produce a predetermined modulation frequency and the processor means is adapted to filter the acquired signals at substantially the same frequency.

14. (Currently amended) ~~A microscopy~~ An imaging apparatus according to claim 11, wherein the illumination means comprises means for generating a spatially periodic interference illumination pattern.

15. (Currently amended) ~~A microscopy imaging~~ An apparatus according to claim 11, wherein the acquisition means comprises an array of light detectors for respectively detecting the light intensities at the plurality of image plane positions.

16. (Currently amended) ~~A microscopy~~ An imaging apparatus according to claim 15, wherein the array of light detectors is a two-dimensional array.

17. (Currently amended) ~~A microscopy~~ An imaging apparatus according to claim 11, wherein the processor means comprises a plurality of signal processors for respectively measuring the characteristics of the oscillatory components of the acquired light signals.

18. (Currently amended) ~~A microscopy~~ An imaging apparatus according to claim 11, wherein illumination means modulates the illumination pattern so that the modulation frequency is at least 100 Hz.

19. (Currently amended) A conversion kit for converting a conventional microscope into the ~~microscopy~~ imaging apparatus of claim 11, the conversion kit comprising:

illumination means for illuminating a specimen with a temporally modulating~~, spatially periodic~~ illumination pattern;

acquisition means for acquiring a plurality of signals at respective positions on a conjugate image plane onto which the microscope images the specimen, each signal corresponding to the incident light intensity at that position and having an oscillatory component caused by the modulating illumination pattern, and

processor means for measuring a characteristic of the oscillatory components of each of the signals, whereby the measured characteristics when combined in their relative positions generate an optically sectioned image of the specimen.

20. (New) A method of generating an image according to claim 3, wherein the measuring and filtering steps are performed by a plurality of signal processors.

21. (New) A method of generating an image according to claim 21, wherein each signal processor has a feedback loop provided by an amplifier, a low-pass filter and a current source,

the feedback loop rejecting a time-invariant component of the respective acquired signal and amplifying the oscillatory component of that signal.

22. (New) A method of generating an image according to claim 3, wherein the filtering step is performed without sampling the modulation frequency of the illumination pattern.

23. (New) A microscopy imaging apparatus according to claim 17, wherein each signal processor has a feedback loop provided by an amplifier, a low-pass filter and a current source, the feedback loop rejecting a time-invariant component of the respective acquired signal and amplifying the oscillatory component of that signal.

24. (New) A microscopy imaging apparatus according to claim 12, wherein the processor means filters each acquired signal without sampling the modulation frequency of the illumination pattern.

25. (New) A microscopy imaging apparatus according to claim 11, wherein the measured characteristic is the amplitude of the oscillatory component.